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UNIVERSITY OF TORONTO
UNIVERSITY EXTENSION

Session 1964–65

AN INTRODUCTION TO MEDICAL STATISTICS

in co-operation with the
SCHOOL OF HYGIENE
UNIVERSITY OF TORONTO

AN INTRODUCTION TO MEDICAL STATISTICS

Wednesdays **25 Lectures**

This course is intended for physicians, veterinarians, research fellows and others with adequate preparation in the health sciences. It is presented in a series of lectures and exercises, and is equivalent to the Medical Statistics Course which is given in the School of Hygiene to students working toward the Diploma in Public Health.

The aim of the course is to develop an understanding and appreciation of statistical methods commonly used in the field of medicine. Examples and exercises are patterned on presentations in medical and biological journals. Since familiarity with these methods can only come through practice, students are required to complete the exercises which amplify and illustrate each lecture. There will be an opportunity to do most of the arithmetic on simple calculating machines provided by the School of Hygiene.

Enrolment will be limited to approximately 20 students. To receive a statement certifying satisfactory completion of the course, students must write the same examination as day students in the Medical Statistics Course.

Admission Requirements

Graduation from university in medicine or a related field. Students are required to submit a brief statement of the nature of their work with the application.

LECTURER: Mr. G. van Belle, M.A.,
Fellow, School of Hygiene,
University of Toronto

TIME: 7.30 p.m.
Fall Term: September 23–December 16 1964
Winter Term: January 6–March 24 1965

PLACE: Room 235, School of Hygiene, 150 College Street

FEE: $95.00

Registration

By mail or in person at Room 201, 84 Queen's Park, 9 a.m. to 5 p.m. daily, except Saturdays. Information may be obtained by phoning 928–2393, 928–2394, 928–2395 or 928–2396.

PROGRAMME

Mimeographed notes reviewing algebra, graphs, logarithms, analytical geometry, binomial theorem and concept of probability, together with exercises on these topics, will be distributed in the first lecture. Understanding of this material will be assumed in subsequent lectures.

1. Nature of statistical methods: origin, concepts, aim and limitations. Use of calculating machines.
2. Graphic presentation of data: histogram, bar diagram, change of scale, unequal class intervals.
3. Measures of central tendency: arithmetic mean, geometric mean, median, mode. Calculation of means from frequency distributions, coding.
4. Measures of variation: absolute, deviation variance, standard deviation. Computational procedures.
5. Probability distributions: normal, binomial, poisson.
6. Sampling variation of means, distribution of means. Testing hypotheses, types of error.
7. Contingency tables, chi-square tests, goodness of fit.
8. t-tests for small samples.
9. Correlation and regression.
10. Clinical trials: aim of clinical trials, sources of bias, interpretation.
11. Description of more advanced statistical methods.

References

The following books will be referred to and purchase is recommended.

1. Bancroft, H., *Introduction to Biostatistics*—Hoeber-Harper Books.
2. Shindell, S., *Statistics, Science and Sense*—University of Pittsburgh Press, 1964.
3. Arkin, H. and Colton, R. R., *Tables for Statisticians*—Barnes and Noble.